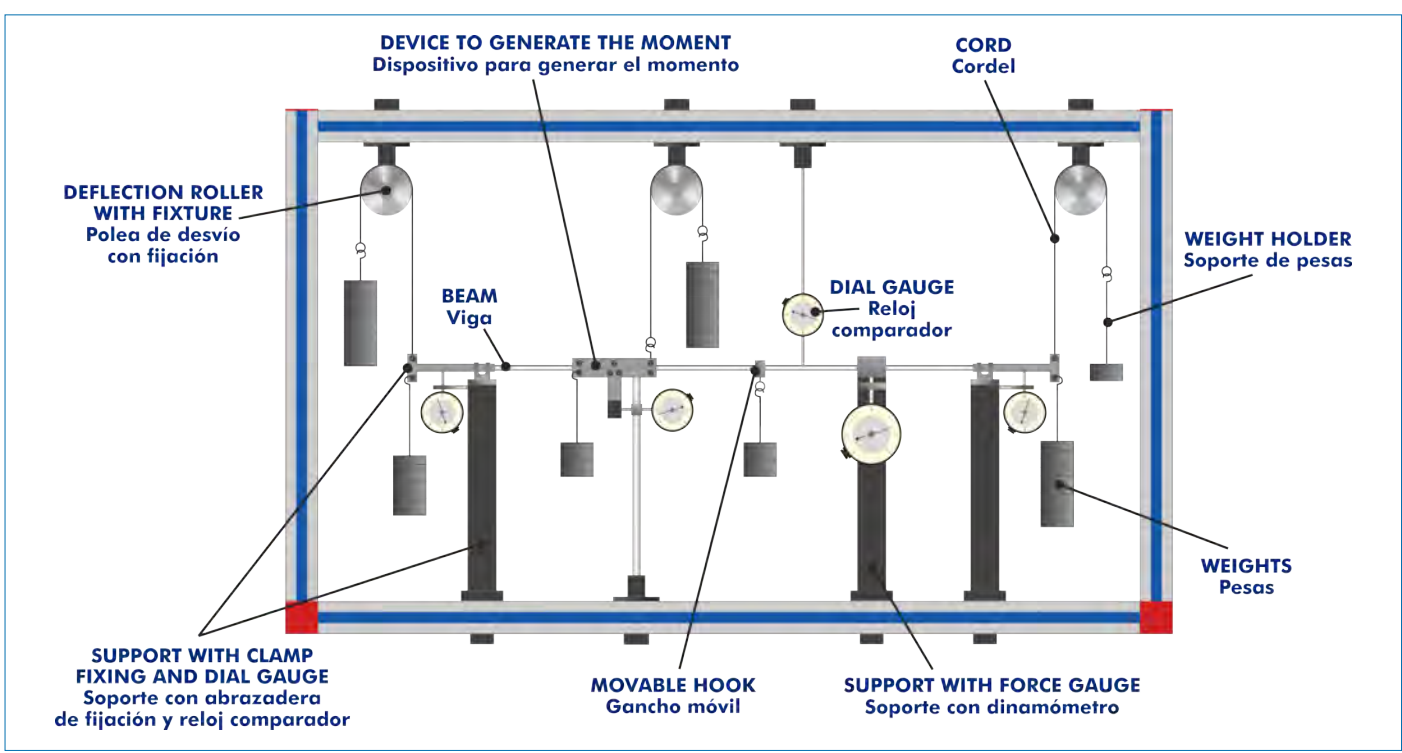
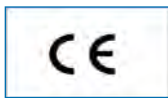


PROCESS DIAGRAM AND UNIT ELEMENTS ALLOCATION



ISO 9001: Quality Management (for Design, Manufacturing, Commercialization and After-sales service)



European Union Certificate (total safety)



Certificates ISO 14001 and ECO-Management and Audit Scheme (environmental management)



"Worlddidac Quality Charter" and Platinum Member of Worlddidac

INTRODUCTION

Beams are structural elements which are relatively long compared to the cross-section. These elements are used in construction, mechanical engineering, etc. and are subject to deformation under load. The elastic line is the deflected shape of the beam with the applied load.

In the case of a simple beam this deformation can be predicted by various methods, such as the principle of virtual work and the Mohr's method. The principle of virtual work indicates that if a system in equilibrium under a system of forces undergoes a deformation, the work done by the external forces equals the work done by the internal stresses due to those forces. The Mohr's method determines the deflection or the angle of inclination of the beam, knowing the load and the dimensions of the beam.

The Unit for studying Methods to Determine the Elastic Line, "MDLE", allows to compare different methods to determine the elastic line of a statically determinate or indeterminate beam.

GENERAL DESCRIPTION

The Unit for studying Methods to Determine the Elastic Line, "MDLE", consists of set of beams, several supports (with clamp fixing and dial gauges, and with force gauge), a device to generate a bending moment, fixed pulleys, dial gauges and a set of weights with weight holders. A beam can be supported by different methods. Two supports with clamp fixing and a dial gauge are provided to realize statically determinate or indeterminate systems. They can also be used as articulated supports. These dial gauges enable the angle of inclination of the beam to be determined at the support.

One support with a force gauge measures the deflection of the beam at a random point, and a device is provided to generate a bending moment at a random point on the beam. A fourth dial gauge measures the angle of inclination of the device.

The unit includes a dial gauge, which is situated in the upper side of the beam, and several fixed pulleys situated in the upper side of the unit frame.

The beam is placed under load by weights located on weight holders. The bending moment is generated by a point load and coupled forces. The clamping moment on the supports can be determined by means of weights.

Several weight sets are used to subject the beam to point loads or moments, and to determine the clamping moments on the supports with clamp fixings.

SPECIFICATIONS

Unit mounted on a metallic frame.

The unit includes:

Three beams:

Material: stainless steel.

Length: 1000 mm.

Cross-section: 25 x 4 mm.

Supports:

2 Supports with clamp fixings and dial gauge to realize statically determinate or indeterminate systems. They can also be used as articulated supports. These dial gauges are used to measure forces and the angle of inclination of the beam.

1 Support with a force gauge to measure the deflection of the beam at a random point.

A device with dial gauge to generate a bending moment at a random point on the beam. The dial gauges measures the angle of inclination of the device.

A dial gauge situated in the upper side of the beam.

3 fixed pulleys situated in the upper side of the unit frame.

3 Cords.

1 Movable hook to situate weights at a random point of the beam.

Set of weights:

Material: Stainless steel.

21 x 5N.

30 x 1N.

It includes seven weight holders (1N).

Measuring ranges:

Force gauge, range: -50 to 50 N, graduations: 1N.

Dial gauge, range: 0 to 20 mm, graduations: 0.01 mm.

Manuals: This unit is supplied with the following manuals: Required Services, Assembly and Installation, Starting-up, Safety, Maintenance & Practices Manuals.

EXERCISES AND PRACTICAL POSSIBILITIES

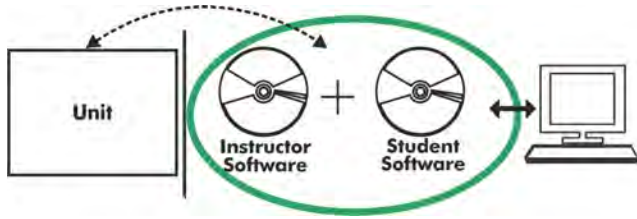
- 1.- Study of different methods to predict the deformation of a simple bar under load: Principle of virtual work, Mohr's method, etc.
- 2.- Study of the principle of superposition.
- 3.- Comparison of different methods to determine the elastic line: Principle of virtual work, Mohr's analogy.
- 4.- Study of the statically determinate and indeterminate systems.
- 5.- Determination of elastic lines for statically determinate or indeterminate beams under load.
- 6.- Determination of the elastic line of a beam under load by the principle of virtual work (calculation).
- 7.- Determination of the elastic line of a beam under load by Mohr's method (graphical representation).
- 8.- Study of several load cases to different bending moment: point load or bending moment.
- 9.- Application of the principle of superposition of the beam under loads and moments.
- 10.-Determination of the maximum deflection of the beam under load.
- 11.-Determination of the angle of inclination of the beam under load.
- 12.-Comparison between calculated and theoretical values for angle of inclination and deflection of the beam under load.

DIMENSIONS AND WEIGHTS

MDLE:

- Dimensions: 1400 x 450 x 1150 mm approx.
(55.12 x 17.72 x 45.27 inches approx.)
- Weight: 50 Kg approx.
(110 pounds approx.)

MDLE/ICAI. Interactive Computer Aided Instruction Software System:



With no physical connection between unit and computer, this complete software package consists of an Instructor Software (EDIBON Classroom Manager -ECM-SOF) totally integrated with the Student Software (EDIBON Student Labsoft -ESL-SOF). Both are interconnected so that the teacher knows at any moment what is the theoretical and practical knowledge of the students.

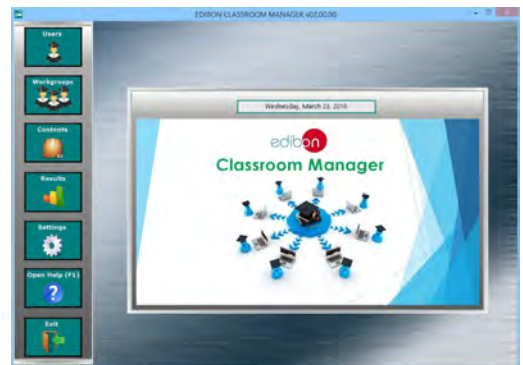
Instructor Software

- ECM-SOF. EDIBON Classroom Manager (Instructor Software).

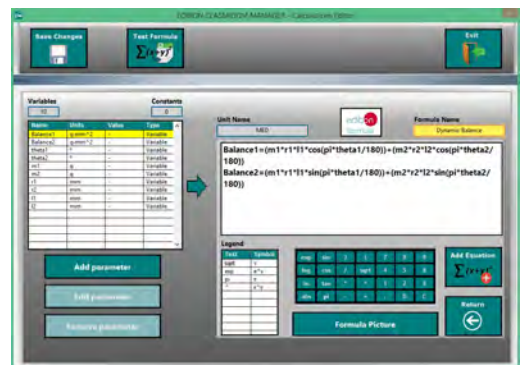
ECM-SOF is the application that allows the Instructor to register students, manage and assign tasks for workgroups, create own content to carry out Practical Exercises, choose one of the evaluation methods to check the Student knowledge and monitor the progression related to the planned tasks for individual students, workgroups, units, etc... so the teacher can know in real time the level of understanding of any student in the classroom.

Innovative features:

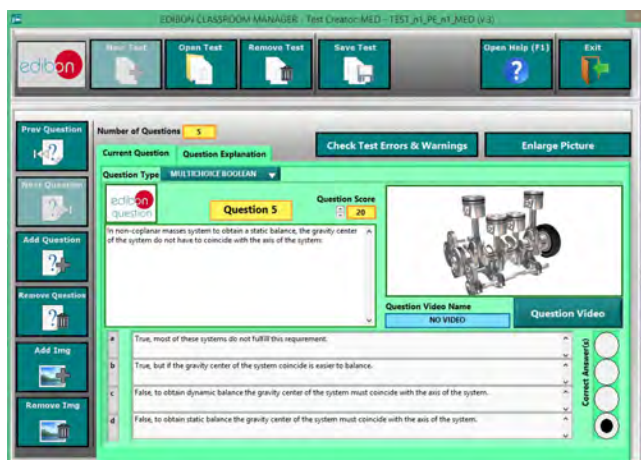
- User Data Base Management.
- Administration and assignment of Workgroup, Task and Training sessions.
- Creation and Integration of Practical Exercises and Multimedia Resources.
- Custom Design of Evaluation Methods.
- Creation and assignment of Formulas & Equations.
- Equation System Solver Engine.
- Updatable Contents.
- Report generation, User Progression Monitoring and Statistics.



ECM-SOF. EDIBON Classroom Manager (Instructor Software) Application Main Screen



ECAL. EDIBON Calculations Program Package - Formula Editor Screen



ETTE. EDIBON Training Test & Exam Program Package - Main Screen with Numeric Result Question



ERS. EDIBON Results & Statistics Program Package - Student Scores Histogram

Optional
Student Software

- ESL-SOF. EDIBON Student Labsoft (Student Software).

ESL-SOF is the application addressed to the Students that helps them to understand theoretical concepts by means of practical exercises and to prove their knowledge and progression by performing tests and calculations in addition to Multimedia Resources. Default planned tasks and an Open workgroup are provided by EDIBON to allow the students start working from the first session. Reports and statistics are available to know their progression at any time, as well as explanations for every exercise to reinforce the theoretically acquired technical knowledge.

Innovative features:

- Student Log-In & Self-Registration.
- Existing Tasks checking & Monitoring.
- Default contents & scheduled tasks available to be used from the first session.
- Practical Exercises accomplishment by following the Manual provided by EDIBON.
- Evaluation Methods to prove your knowledge and progression.
- Test self-correction.
- Calculations computing and plotting.
- Equation System Solver Engine.
- User Monitoring Learning & Printable Reports.
- Multimedia-Supported auxiliary resources.

For more information see ICAI catalogue. Click on the following link:

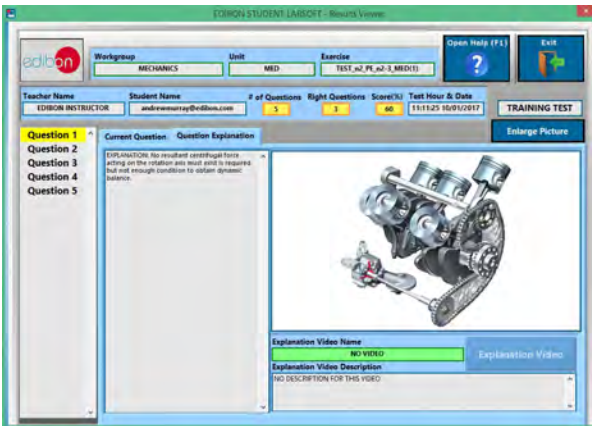
www.edibon.com/en/files/expansion/ICAI/catalog



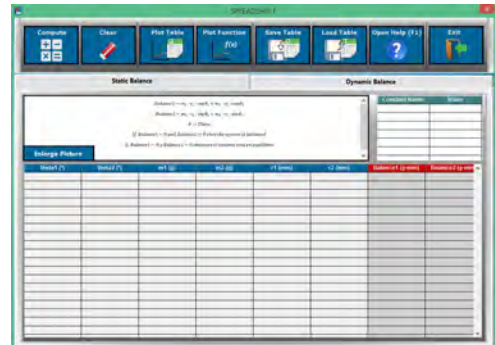
ESL-SOF. EDIBON Student LabSoft (Student Software)
Application Main Screen



EPE. EDIBON Practical Exercise Program Package Main Screen



ERS. EDIBON Results & Statistics Program Package - Question Explanation



ECAL. EDIBON Calculations Program Package Main Screen

* Specifications subject to change without previous notice, due to the convenience of improvement of the product.



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REPRESENTATIVE:

